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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,556	09/02/2003	Mike Thomas Goulet	19,693	5107
23556	7590	04/27/2006	EXAMINER	
KIMBERLY-CLARK WORLDWIDE, INC. 401 NORTH LAKE STREET NEENAH, WI 54956			CORDRAY, DENNIS R	
			ART UNIT	PAPER NUMBER
			1731	

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/654,556

Applicant(s)

GOULET ET AL.

Examiner

Dennis Cordray

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-45 and 54-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-55 and 57-62 is/are rejected.
- 7) ☒ Claim(s) 56 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/03/2006.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-22, 24-38, 54-55 and 59-61 are rejected under 35 U.S.C. 103 as being anticipated by Merker et al (6500289) in view of Miyahara et al (5264468).

Merker et al discloses a fibrous sheet that can be a paper towel (Abstract; col 1, line 21). The sheet can wet laid or air laid (col 5, lines 41-42) and can have a cured binder solution topically applied by printing in a pattern to one or both outer surfaces (col 4, lines 45-50; col 8, lines 37-39). The binder solution can be a different material for each surface and can be applied in a different networked pattern to each surface (col 8, lines 63-67; col 9, lines 1-9). The binder is applied to 15-60% of each surface (col 9, lines 53-59). The binding material results from the crosslinking reaction of a multifunctional epoxy resin (epoxy functional polymer with multiple pendant epoxy groups, which includes more than 10 pendant epoxy groups) and a polymeric amine (epoxy-reactive polymer) (col 10, lines 59-63; col 11, lines 31-47). The binder solution is applied in a pattern of regularly spaced deposits (col 14, lines 30-40). Merker also discloses that the fibrous sheet can be two or more layers (col 5, lines 32-36). Where

Art Unit: 1731

more than two layers are formed and the binder solution is applied to the outer surfaces after sheet formation, it is inherently not applied to at least one surface of an inner layer.

Merker et al does disclose an epoxy-reactive polymer containing carboxyl groups. Merker et al also does disclose that the amount of epoxy-functional polymer relative to epoxy-reactive polymer is from about 0.5 to about 200 dry weight percent.

Miyahara et al discloses an aqueous crosslinkable resin composition suitable as a surface coating or binder for paper comprising A) a copolymer comprising monomers containing carboxyl groups, acrylic monomers and, optionally, nitrogen containing monomers and B) an epoxy resin (Abstract; col 1, lines 6-13). A suitable well-known epoxy resin is polyglycerol polyglycidyl ether (can have 10 or more epoxy-functional units) (col 5, lines 46-47). The composition is topically applied via a bar coater (col 6, lines 59-60). Crosslinking between the carboxyl groups of polymer A and the epoxy resin is achieved by removal of water (col 2, lines 11-14; col 6, lines 8-10). The amount of each polymer is adjusted to provide a ratio of carboxyl groups to epoxy groups from 1:3 to 3:1 to provide sufficient crosslinking without a great excess of either material (col 5, line 58 to col 6, line 2).

The art of Merker et al, Miyahara et al and the instant invention are analogous as pertaining to binder compositions for paper products. It would have been obvious to one of skill in the art to adjust the ratio of epoxy-functional and epoxy-reactive polymers within the claimed range to provide a similar number of epoxy-functional and epoxy-reactive groups to facilitate complete crosslinking of the binder composition of Merler et al in view of Miyahara et al. It would also have been obvious to use carboxyl

Art Unit: 1731

functionality to crosslink the epoxy functional polymer as a well-known and functionally equivalent option. The fibrous sheets produced can have the claimed increase in wet/dry tensile strength ratio because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Claims 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merker et al in view of Miyahara et al and further in view of Salmeen et al (4610743).

Merker et al and Miyahara et al do not disclose that the binder is applied to the inner surfaces of the two outer plies of a multilayer paper towel.

Salmeen et al teaches that it is common to bind multiple plies of a paper product by applying a binding liquid to one or more of the plies then pressing the plies together in the nip between two calendar rolls (col 1, lines 66-68; col 2, lines 1-2). Salmeen et al also discloses a multi-ply paper product wherein the plies can be brought together in different locations in the papermaking process and wherein one or more of the plies can have a pattern of binder solution printed onto one or more sides via a gravure or impression roller (col 12, lines 48-68; col 13, lines 1-13).

The art of Merker et al, Miyahara et al Salmeen et al and the instant invention are analogous as pertaining to paper products comprising a binder solution. It would have

Art Unit: 1731

been obvious to one of ordinary skill in the art to apply the binder solution to inner surfaces of the outer plies of the paper product of Merker et al in view of Miyahara et al and further in view of Salmeen et al to facilitate binding of the layers together.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merker et al in view of Miyahara et al and further in view of Larson et al (6129815).

Merker et al and Miyahara et al do not disclose spraying the binder in a random pattern.

Larson et al discloses a multi-layered towel comprising a binder (Abstract). Larson et al also discloses that the binder can be applied to the a surface of the towel by rotogravure printing, flexographic means or spraying and that the pattern is such that the binder occupies from 15-60% of the area of the web (col 12, lines 48-58). Spraying inherently results in a random pattern of dots.

The art of Merker et al, Miyahara et al, Larson et al and the instant invention are analogous as pertaining to multi-ply paper products comprising a binder solution. It would have been obvious to one of ordinary skill in the art to apply the binder solution by spraying to the paper product of Merker et al in view of Miyahara et al and further in view of Larson et al as a functionally equivalent option.

Claims 57-58 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merker et al in view of Miyahara et al and further in view of Owens et al (US 2001/0005529) and Dick et al (5484825).

Art Unit: 1731

Merker et al and Miyahara et al do not disclose a carboxylated acrylic polymer emulsion for the epoxy reactive polymer or a poly(methyldiallylamine)-epichlorohydrin resin for the epoxy-functional polymer.

Owens et al teaches the use of KYMENE ® 2064, which is identified in the instant Specification (see p 2, par 15) as a commercially available poly(methyldiallylamine)-epichlorohydrin resin, as a known wet strength agent for paper applications. Owens et al also discloses that KYMENE ® 2064 crosslinks with itself and with compounds containing carboxyl or hydroxyl groups (p 2, par 10).

Dick et al discloses a fibrous tissue comprising a topically applied (via spraying) and cured binder solution (Abstract; col 4, lines 44-45, Example 1). The binder solution can comprise a carboxylated acrylic polymer and an epoxy resin (Abstract; col 1, lines 48-52; col 2, lines 60-62 to col 3, line 2).

Merker et al, Miyahara et al, Owens et al, Dick et al and the instant invention are analogous as pertaining to crosslinking binder compositions applied to the surface of paper products. It would have been obvious to one skilled in the art to use a carboxylated acrylic polymer emulsion for the epoxy reactive polymer or a poly(methyldiallylamine)-epichlorohydrin resin for the epoxy-functional polymer in the product of Merker et al in view of Miyahara et al and further in view of Owens et al and Dick et al as known functionally equivalent options.

Allowable Subject Matter

Art Unit: 1731

Claim 56 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Carboxylated vinyl acetate-ethylene polymers have been used as adhesives for cores in wallboards (6319312), on difficult to bond surfaces such as polyethylene, poly(ethylene terephthalate), and oriented polypropylene (5872181), and other non-porous surfaces (5610215). They are also known to be able to remain permanently tacky. Their use as topical applications in papermaking is not known in prior art and would not be obvious from studying previous applications of the polymers.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 16-37 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 22-35, 42 and 48-54 of copending Application No. 10/893209. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Art Unit: 1731

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 38-45 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 55-62 of copending Application No. 10/893209. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the copending application and the instant claims are related as genus and species. Specifically, claim 55 of the copending application recites "a multi-ply paper towel comprising two outer plies...wherein one or both inner surfaces comprise a topically-applied network of a cured binder composition..." Claim 38 of the instant application recites "a multi-ply paper towel comprising two outer plies...wherein both inner surfaces comprise a topically-applied network of a cured binder composition..." The cured binder

Art Unit: 1731

compositions are the same in both applications. Claims 39-45 read the same as Claims 56-62 of the copending application with appropriate reference changes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 16-32 and 30-45 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12 and 21-46 of copending Application No. 10/893094. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims and the claims of the copending application are related as genus and species. Specifically the instant claims refer to fibrous sheet or multi-ply paper towels comprising a topically-applied network of a cured binder composition resulting from the cross-linking reaction of an epoxy-reactive polymer and an epoxy-functional polymer. The copending claims refer to fibrous sheet or multi-ply paper towels comprising a topically-applied network of a cured binder composition resulting from the cross-linking reaction of an azetidinium-reactive polymer and an azetidinium-functional polymer. The azetidinium-reactive polymers are the same as the epoxy-reactive polymers and the azetidinium-functional polymers are epoxy-functional polymers (see pp 3-4 of the disclosure of the copending application). The instant and copending dependent claims recite the same limitations.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Art Unit: 1731

Response to Arguments

Applicant's arguments, see p 8, filed 3/21/2006, with respect to the rejections under 35 U.S.C. 112 have been fully considered and are persuasive. The rejection of Claims 19, 21-23, 33, 35 and 43-45 have been withdrawn.

Applicant's arguments with respect to the rejection of claims 16-22 and 24-38 under 35 U.S.C. 102(a) have been fully considered but are not persuasive. Due to the amendments to the claims, the rejection has been withdrawn. However, new grounds of rejection based on the amended claims are made under 35 U.S.C. 103(a) as detailed above.

Applicant argues on pp 8-9 that the amine curing agents disclosed by Merker et al would be expected to be present only in small amounts and also that the relative amounts of the epoxy-functional and epoxy-reactive polymers are not taught. Applicant also argues that Merker et al does not disclose carboxyl containing polymers. The originally presented claims did not specify the absolute or relative amounts of the epoxy-functional and epoxy-reactive polymers or that carboxyl containing polymers were required. Limitations of disclosed embodiments are not read into the claims, thus Merker et al does properly anticipate the claims. The newly added limitations in the amended claims are discussed in the rejections above.

Applicant argues on p 9 that the aqueous binder compositions can consist essentially of the epoxy-functional and epoxy-reactive polymers and that any other bonding materials are present in insignificant amounts. The original claim language as well as the amended language states that the "...outer surface comprises a topically-

Art Unit: 1731

applied network of a cured binder composition..." The use of "comprises" leaves the claim open to other materials, including binder materials, so long as at least a portion of the binder composition consists essentially of the crosslinked product of epoxy-functional and epoxy-reactive polymers, which is disclosed in Merker et al.

Applicant argues on p 9 that the epoxy-functional polymers have at least 10 epoxy moieties per molecule. Again, the claims originally presented do not require that limitation and, in any case, Merker et al provides for multifunctional epoxy resins where more than two reactive groups are present per molecule (col 11, lines 31-33). More than two includes more than 10. The specific epoxy containing materials identified by Merker et al include, but are not limited to, the disclosed examples.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1731


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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